developed with Sigma 104 phosphatase substrate. Absorbances were measured at 405 nm with a Biorad ELISA reader and Macintosh analytic software. OD values of nonspecific binding of sera to GST alone were subtracted from the raw values of binding to the GST-GCA fusion proteins in order to determine specific absorbances.

In the claims:

Please cancel claims 5-8, 15, 17-27 and 30-42, without prejudice.

Please replace claims 1, 3, 4, 10, 11, 14, 16, 28, 29, and 43 with amended claims 1, 3, 4, 10, 11, 14, 16, 28, 29, and 43 as follows:

1. (Twice Amended) An isolated or recombinant nucleic acid comprising: a nucleic acid sequence having at least 75% sequence identity to SEQ ID NO:3, wherein the nucleic acid is capable of identifying or detecting a GCA associated nucleic acid.

3. (Twice Amended) The nucleic acid of claim 2, wherein the sequence identity to SEQ ID NO:3 is at least 95%.

4. (Twice Amended) An isolated or recombinant nucleic acid comprising a sequence as set forth in SEQ ID NO:3.

10. (Twice Amended) The nucleic acid of claim 1, claim 4, claim 9, claim 44 or claim 45, wherein the nucleic acid is between about 15 and about 200 residues in length; is between about 25 and about 100 residues in length; or is between about 35 and about 75 residues in length.

11. (Twice Amended) An expression vector comprising at least one nucleic acid operably linked to a promoter, wherein the nucleic acid comprises a sequence as set forth in claim 1, claim 4, claim 9, claim 44 or claim 45.

D20 Sub E6

14. (Twice Amended) A transformed cell comprising the nucleic acid of claim 1, claim 4, claim 9, claim 44 or claim 45.

D21 Sub E7

16. (Twice Amended) A polymerase chain reaction (PCR) primer pair that can amplify a nucleic acid sequence as set forth in claim 1, claim 4, claim 9, claim 44 or claim 45, or a subsequence thereof, under *in situ* or *in vitro* conditions.

28. (Twice Amended) A kit for detecting the presence of nucleic acid sequences associated with GCA in a sample comprising a nucleic acid as set forth in claim 1, claim 4, claim 9, claim 44 or claim 45, wherein the nucleic acid of the sample detectably hybridizes to a nucleic acid as set forth in claim 1, claim 4, claim 9, claim 44 or claim 45 under *in situ* or *in vitro* conditions.

D22 Sub E8

29. (Twice Amended) A kit for detecting the presence of nucleic acid sequences associated with GCA in a sample comprising an amplification primer pair that can amplify a nucleic acid in the sample having a sequence as set forth in claim 1, claim 4, claim 9, claim 44 or claim 45 under *in situ* or *in vitro* conditions.

D23

43. (Amended) A method of producing a polypeptide having an amino acid sequence comprising SEQ ID NO:4, comprising:

expressing the nucleotide of claim 45.

Please add claims 44-50.

44. (New) An isolated or recombinant nucleic acid comprising a nucleic acid sequence having at least 75% identity to a nucleic acid encoding a polypeptide as set forth in SEQ ID NO:4.

D24

Sub E9

45. (New) An isolated or recombinant nucleic acid comprising a nucleic acid sequence encoding a polypeptide as set forth in SEQ ID NO:4.

46. (New) A method for diagnosing or determining predisposition for GCA comprising the following steps:

(a) providing a nucleic acid as set forth in claim 1, claim 4, claim 9, claim 44, or claim 45, wherein the nucleic acid is capable of detectably hybridizing to a GCA associated nucleic acid under *in situ* or *in vitro* conditions;

(b) providing a tissue or serum or urine sample;

(c) contacting the nucleic acid with the sample; and

(d) detecting whether the nucleic acid hybridizes to a nucleic acid in the sample, wherein the specific hybridization is diagnostic for or determines a predisposition for GCA.

47. (New) A method for diagnosing or determining predisposition for GCA comprising the following steps:

(a) providing a nucleic acid amplification primer pair as set forth in claim 16, wherein the primer pair can amplify a GCA-associated nucleic acid under *in situ* or *in vitro* conditions;

(b) providing a tissue or serum or urine sample;

(c) contacting the primer pair with the sample under amplification reaction conditions; and

(d) detecting whether the primer pair has amplified a nucleic acid in the sample, wherein amplification is diagnostic for or determines a predisposition for GCA.

48. (New) A method for detecting the presence of a nucleic acid comprising a sequence as set forth in SEQ ID NO:3 to diagnose or determine the predisposition for GCA comprising the following steps:

(a) providing a nucleic acid as set forth in claim 1, claim 4, claim 9, claim 44, or claim 45, wherein the nucleic acid is capable of hybridizing to a GCA associated nucleic acid under *in situ* or *in vitro* conditions;

(b) providing a biological sample comprising a nucleic acid;

(c) contacting the nucleic acid with the biological sample under conditions wherein the nucleic acid is capable of hybridizing to a nucleic acid comprising a sequence as set forth in SEQ ID NO:3 under in situ or in vitro conditions; and

(d) detecting whether the nucleic acid specifically hybridizes to a nucleic acid in the sample, wherein the specific hybridization is diagnostic for or determines a predisposition for GCA.

49. (New) A method for detecting the presence of a nucleic acid comprising a sequence as set forth in SEQ ID NO:3 to diagnose or determine the predisposition for GCA comprising the following steps:

(a) providing an amplification primer pair capable of detecting a nucleic acid comprising a sequence as set forth in SEQ ID NO:3 by amplification;

(b) providing a biological sample comprising a nucleic acid;

(c) contacting the amplification primer pair of step (a) with the biological sample under conditions wherein the amplification primer pair is capable of amplifying the nucleic acid; and

(d) detecting the presence of an amplification product, wherein the presence of an amplification product is diagnostic for or determines a predisposition for GCA.

50. (New) The method of claim 49, wherein the amplification is by polymerase chain reaction (PCR).

In the abstract:

Please replace the abstract with the following version.

This invention provides nucleic acids and methods for making and using them. The compositions and methods of the invention are used to diagnose and treat Giant Cell Arteritis (GCA).